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1986 - 2000

# OUTLOOK FOR COMMERCIAL AIRCRAFT

COMMENTS AND QUESTIONS MAY BE ADDRESSED TO MARKETING STRATEGIC PLANS (18-70),
DOUGLAS AIRCRAFT COMPANY, 3855 LAKEWOOD BOULEVARD, LONG BEACH, CA 90846, U.S.A.

AUGUST 1986

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## INTRODUCTION

The Outlook for Commercial Aircraft is published by the Douglas Aircraft Company, a component of the McDonnell Douglas Corporation. This report summarizes our forecast of the market for commercial passenger and freight aircraft over the next 15 years, from 1986 through 2000.

This year the passenger aircraft forecast consists of an analysis of 94 individual airlines. An additional 97 airlines are aggregated into five regions based on the domicile of the airline – Europe, Pacific/Asia, Middle East, Africa, and Latin America.

The cargo aircraft forecast includes freighter service, lower hold cargo transported on passenger aircraft, and combi aircraft service offering both lower hold and main deck cargo capacity on passenger flights.

## FORECAST SYNOPSIS

The transportation industry will continue to change as it enters the next decade. During the short term, U.S. airline consolidation and increased hub operations will intensify. Europe will experience some relaxation of regulation, and the Pacific Region will continue its phenomenal growth. The manufacturers will emphasize the development of new technologies ranging from advanced lightweight composites to ultra-high-bypass powered aircraft to be introduced by the early 1990s. Looking into the future, research continues on hypersonic transports (commonly referred to as the Orient Express) which could be introduced within the first quarter of the 21st century.

Over the past 2½ years, the commercial aircraft manufacturing market has registered an impressive rebound. At year-end 1985, the commercial aircraft backlog for passenger and freight airlines approached 1,000 aircraft with a market value of 35 billion in 1986 dollars. As recently as 1979, the commercial backlog was as low as 114 units with a value of 3.9 billion 1386 dollars. With almost 1,000 aircraft in the backlog, this is the highest it has been since 1978/1979.

### Passenger Marketplace

Future market prospects as measured by the growth rate in revenue passenger-kilometers are the best they have been in 6 years. We are forecasting a 6.5 percent annual increase over the next 15 years. This represents an increase of nearly 2½ times over the 1985 base.

We have assumed passenger load factors will increase over the forecast period from 64.0 percent in 1985 to 69.2 percent in the year 2000. This assessment is based on our analysis of the competitive pricing environment, which has real yields (revenue per passenger-kilometer after removing inflation) declining throughout the forecast period. Significant investments have been made in computer software technology to assist in improving load factors and fare distribution. In the future, even greater emphasis will be placed on achieving higher utilization and increased profitability from available seats.

Primarily as a result of deregulation, the discretionary air travel market has been identified as one of the fastest growing segments. Attracting discretionary traffic will be profitable only if capacity is controlled and closely monitored by refined yield management techniques.

By the year 2000 the passenger fleet will have grown to 9,629 aircraft from a base of 5,621 in 1985 (for the group of 191 passenger airlines Douglas includes in its world). Aircraft deliveries will average 442 per year in 1986-2000, which is 36 percent above average deliveries in 1971-1985.

Short-range aircraft will continue to dominate the production line on the basis of units. We are forecasting a market of 1,166 SR-110 and 1,786 SR-160 passenger aircraft. This market is significantly influenced by developments in the United States as 39 and 54 percent of the deliveries, respectively, are forecast for the United States. Peak deliveries are in the 1991-1995 time frame.

The latter part of the forecast period will see a relatively dramatic increase in the demand for long-range wide-body aircraft. This is a result of increased international traffic, especially in the North and Mid-Pacific region, combined with retirements of first-generation wide-body aircraft.

Overall, Douglas forecasts 5,731 new passenger aircraft to be delivered by the year 2000. This represents a moderate 5.4 percent increase over the 1985 forecast of 5,437 new passenger aircraft. The continuing trend toward smaller aircraft (hence, more units required for a given level of capacity) coupled with a modestly higher forecast of total required capacity explain this increase in net demand for new passenger aircraft.

**Cargo Marketplace**

With dramatic changes occurring in the inherent structure of the $28 billion-a-year air cargo industry, the outlook for the remainder of the century promises to be dynamic. The recent trends toward (1) development of fully integrated forwarders, (2) demand for door-to-door services, (3) reduction in freighter service by combination carriers, and (4) worldwide expansion of the $6 billion small package/express sector will force further significant industry changes over the long term. Service and cost will continue to warrant increased emphasis in this highly competitive arena.

Through the remainder of this century, total worldwide air cargo is expected to expand at an average annual rate of 6.6 percent, prompted by the proliferation of fully integrated operators (included in this year's analysis); thus, cargo shipped on freighter aircraft should develop somewhat faster than cargo transported on passenger flights. With the intensification of competition by dedicated all-cargo operators, yields are anticipated to edge slightly downward in real terms. The possibility of a shakeout exists among some of the smaller all-cargo carriers, with consolidations a probable result. The forecasted cargo growth has not considered the impact of electronic mail upon the air cargo industry since its full implications have not been fully assessed. It is expected, however, that electronic mail will not pose a serious threat to air cargo volumes as a whole.

By the year 2000, the world's active freighter fleet is projected to grow to 664 units from the estimated 353 aircraft in service at the end of 1985. An additional 410 freighters (both new and used aircraft) will be required to satisfy the forecasted demand levels, after considering a conservative retirement schedule for existing aircraft. Of the total additional units, 148 freighters will be from the large class, 101 from the medium category, and 161 will be small freighters.

## ECONOMIC OVERVIEW

World economic growth increased 2.7 percent in 1985, the third consecutive year of economic increase. While the 1985 growth was less than the 4.2 percent increase in 1984, 1985 marked another year with the world inflation rate well under control.

One percent of the difference between the world growth rate in 1985 versus the rate in 1984 can be attributed to slower 1985 economic growth in the United States (2.3 percent versus 6.8 percent in 1984). Despite sluggish U.S. growth, the high-valued dollar stimulated world exports to the United States, resulting in a record high current account deficit of $117 billion.

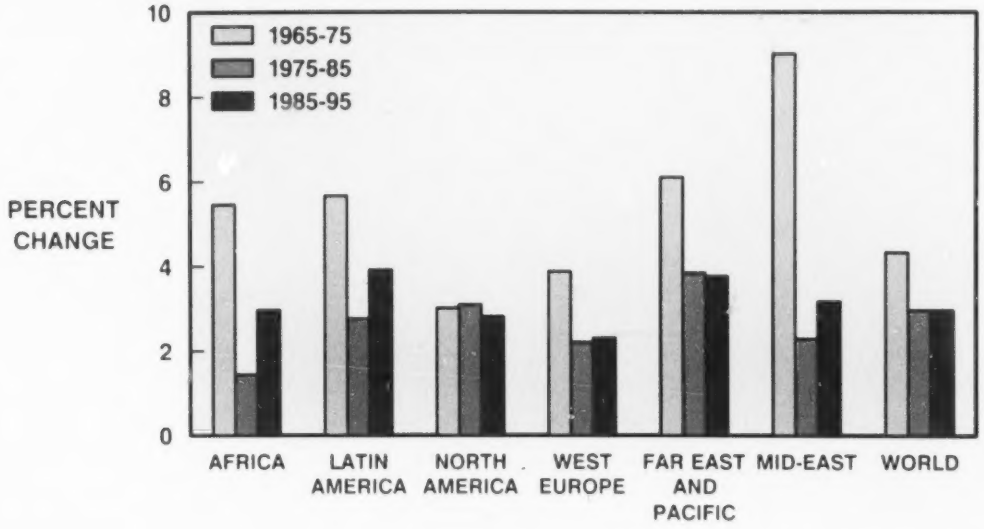
Essentially, economic growth across countries in 1985 patterned the 1984 experience. Both Africa and the Middle East continued to slip behind the rest of the world in terms of economic growth. While African economic growth remained positive (1.2 percent), Middle Eastern economic growth turned slightly negative (−0.5 percent) in 1985. The Asia/Pacific region led the world, with economic growth of 4.4 percent. Just as in 1984, Brazil and Mexico provided a strong basis for Latin America's 2.8-percent growth in 1985. In fact, Brazil's 7-percent growth in 1985 easily surpassed the growth of all other industrial nations. Europe's economic increase of 2.4 percent in 1985 was the third year of continual economic improvement.

Two fundamental factors underlying future world economic growth changed in 1985. First, the value of the dollar reached a peak in February and continued an orderly decline thereafter. The September Group of Five agreement to further push down the value of the dollar helped accelerate the decline begun in February. The Group of Five probably should be credited with changing the market perception of the dollar. While in time, perhaps in late 1986, the lower value of the dollar will reduce the U.S. current account deficit, the first effect is likely to be an increase in this deficit. Lower value of the dollar and slower U.S. economic growth signal a major shift to the economies of countries which have grown by increasing exports to the United States.

Second, in 1985 the price of petroleum began to decline. We believe that the price of crude petroleum (in 1986 dollars) will be roughly constant for most of the forecast period (see accompanying chart). This will reduce world inflation in 1986 and put downward pressure on interest rates.

Given falling oil prices and lower interest rates, the world economy ought to have another healthy year in 1986. However, growth is expected to be modest given the initial negative impact of lower energy prices; and the stimulative effect of lower interest rates may be offset by 3 years of past consumer purchases. The decline in oil prices will severely impact oil-producing nations, their suppliers, and oil-producing companies. While lower interest rates will help stimulate economic growth, any decline in interest rates is likely to be closely monitored so as not to cause renewed inflation. The positive factors of lower oil prices and lower interest rates virtually guarantee modest economic growth in 1986. However, after 4 years of economic expansion, U.S. demand for goods and services is likely to be soft in 1987, and we do not expect another nation to offset the resulting loss of demand.

# REGIONAL ECONOMIC OUTLOOK
# LONG-TERM GROSS DOMESTIC PRODUCT

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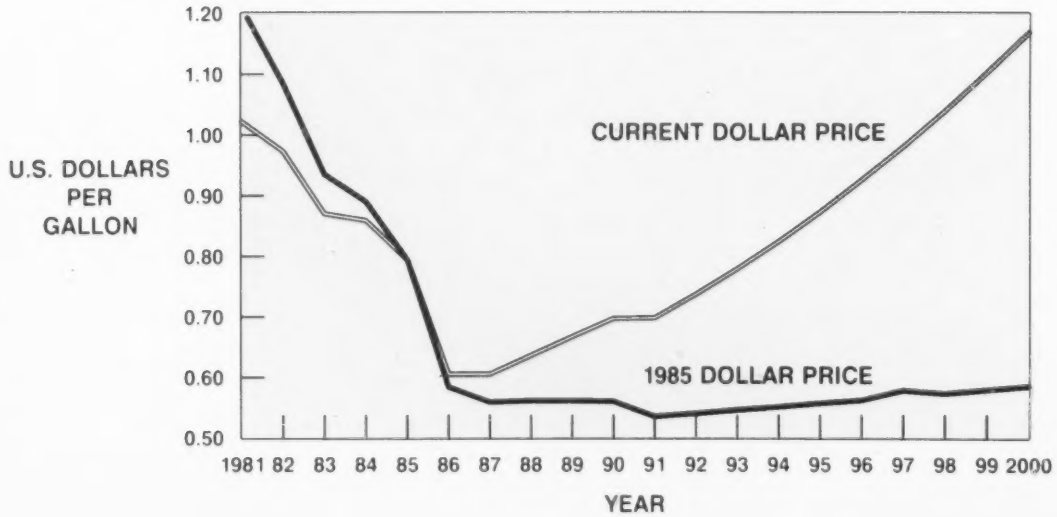
# U.S. JET KEROSENE PRICE FORECAST

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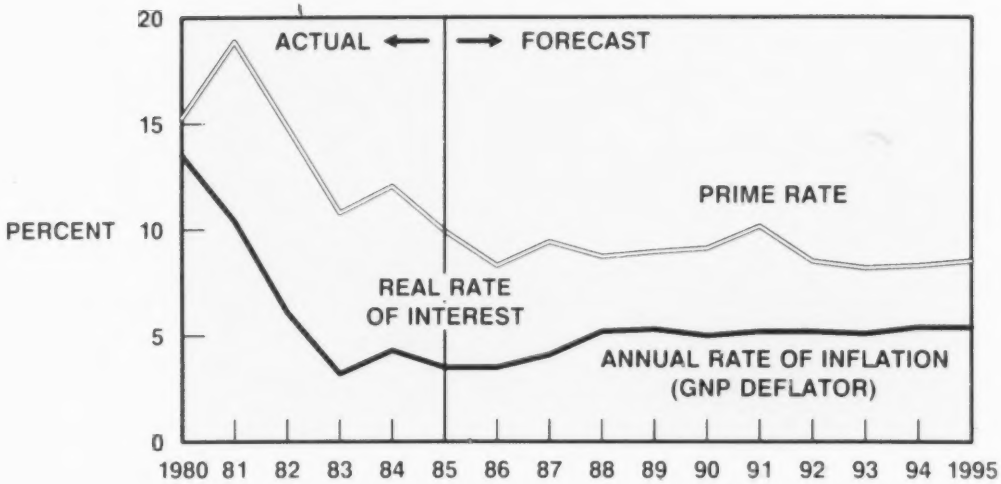
# INTEREST RATES AND INFLATION

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# PASSENGER TRAFFIC

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## TRAFFIC FORECAST METHODOLOGY

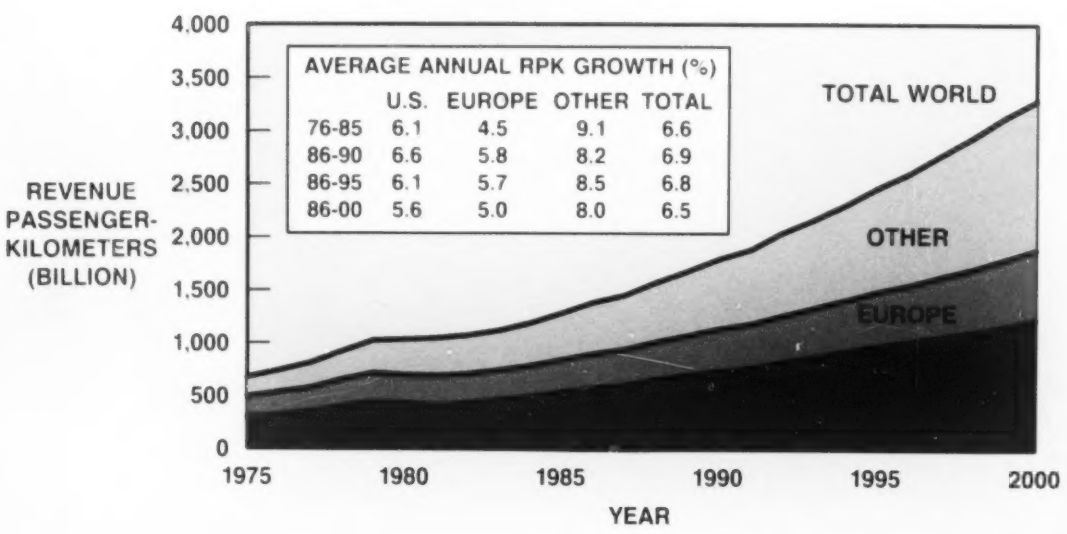
Economic forecasts of individual countries are developed utilizing the Wharton Economic Forecasting Associates World Model and based upon Douglas Aircraft Company assumptions. This process is used for projections of 50 separate economies with an additional 40 countries forecast separately. With the use of econometric analyses, the forecast is then used to develop passenger and cargo forecasts for 32 separate regions as defined by the International Air Transport Association (IATA). All forecasts in this publication were made in January 1986.

## PASSENGER TRAFFIC

During 1986, traffic is expected to grow approximately 6.8 percent. This growth, coupled with the continuing focus on capacity control and yield management, should contribute to an increase in yield and consequently profitability for most in the airline industry.

As a group, the 191 airlines in our sample have the potential to attain an average annual traffic growth rate of 6.5 percent over the next 15-year period (1986-2000). By 1990, the average world load factor is expected to reach a record 66 percent. This will be the first time in a pre- or post-deregulation era that average world load factors have reached this level.

# PASSENGER TRAFFIC
## ALL SERVICES

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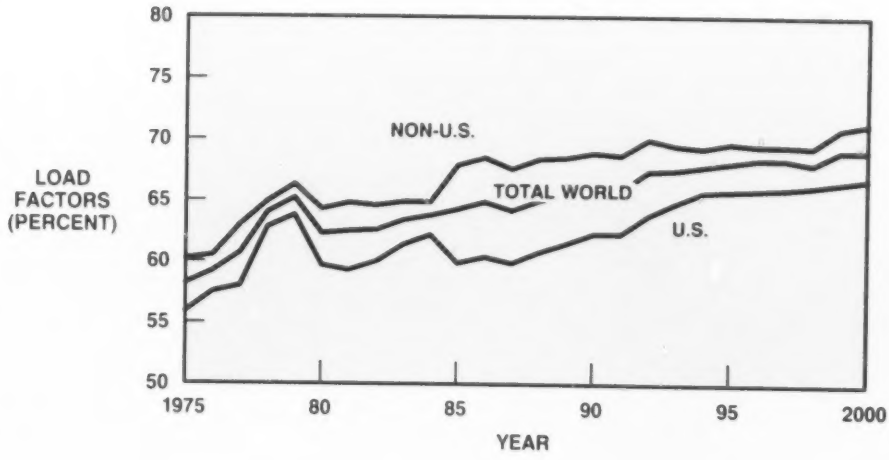
## LOAD FACTORS

Load factors are assumed to increase through the study period to achieve an industry high of 69.5 percent by the year 2000. However, the average yearly load factor will vary because of changing economic conditions that may exist during a given period. A forecast load factor increase also accommodates the probable but more controlled fare wars, with resulting higher traffic and depressed yields. For the U.S. airlines, there is a slight load factor decrease from 60.4 percent in 1986 to 59.9 percent in 1987. This reflects the continued refinement of yield management techniques that will offer an equilibrium between yield and load factor.

# AVERAGE PASSENGER LOAD FACTORS
## ALL SERVICES

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# PASSENGER CAPACITY

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## PASSENGER CAPACITY

The forecast capacity requirement of available seat-kilometers is satisfied by existing equipment (minus retirements), orders and options, projected used aircraft acquisitions, and new aircraft by generic class. (A definition of generic aircraft is given in Appendix A.)

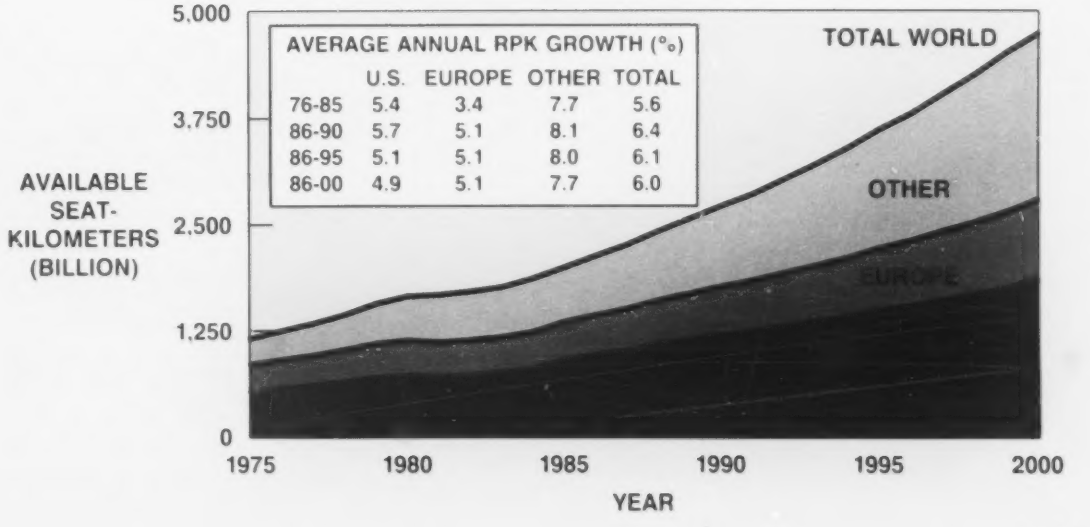
The existing equipment (minus retirements) and the orders/options provide 98.2 percent of the capacity required in 1986. By the year 2000, this equipment will satisfy less than 24 percent of that capacity.

It should be noted, however, that the capacity requirements are not satisfied strictly by adding aircraft. The productivity of the existing equipment is analyzed and projections are made for realistic productivity gains both on existing and future equipment.

### AVAILABLE SEAT-KILOMETERS
### CAPACITY REQUIREMENT FORECAST

With load factors increasing over time, the average annual ASK growth is smaller than the RPK traffic projections. Load factor increases are expected due to continued improvement in airline yield management practices.

## PASSENGER CAPACITY REQUIREMENTS
### ALL SERVICES

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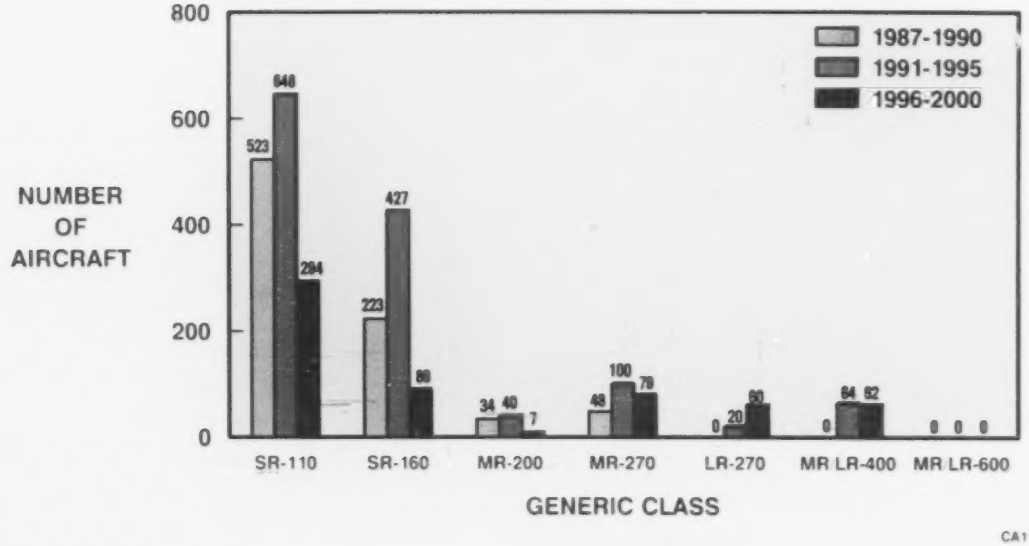
## RETIREMENTS

Retirements were considered on an individual airline basis for the 94 airlines analyzed in detail. The general trend over the last few years has been to retain existing equipment. As airlines achieve financial stability, however, older fleets are being phased out in favor of new equipment with better operating economies. In general, standard-body aircraft were retired at 23 to 28 years while wide-body equipment was retired at 25 to 30 years.

A portion of the retired aircraft was assumed to be reabsorbed into the study group airline fleets as used equipment. Equipment listed as retired is considered to be no longer in service in the study group.

## PASSENGER AIRCRAFT RETIREMENTS
### BY GENERIC CLASS

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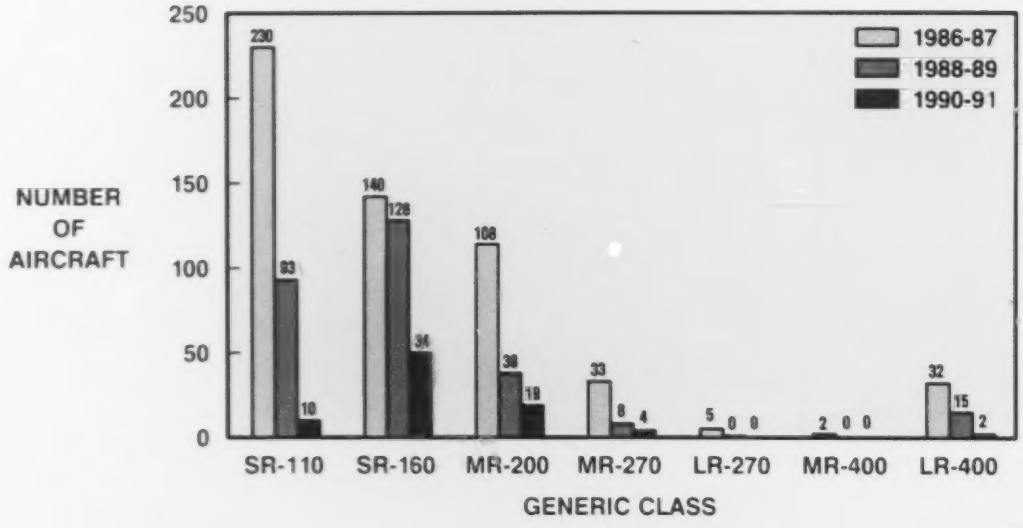
## ORDERS

Announced firm orders were included on an individual airline basis using these guidelines: if new capacity had been required at known delivery dates based on traffic growth or planned retirements, firm orders were included; if new capacity at known delivery dates had resulted in excess capacity, firm orders were delayed.

### PASSENGER AIRCRAFT ORDERS
BY GENERIC CLASS

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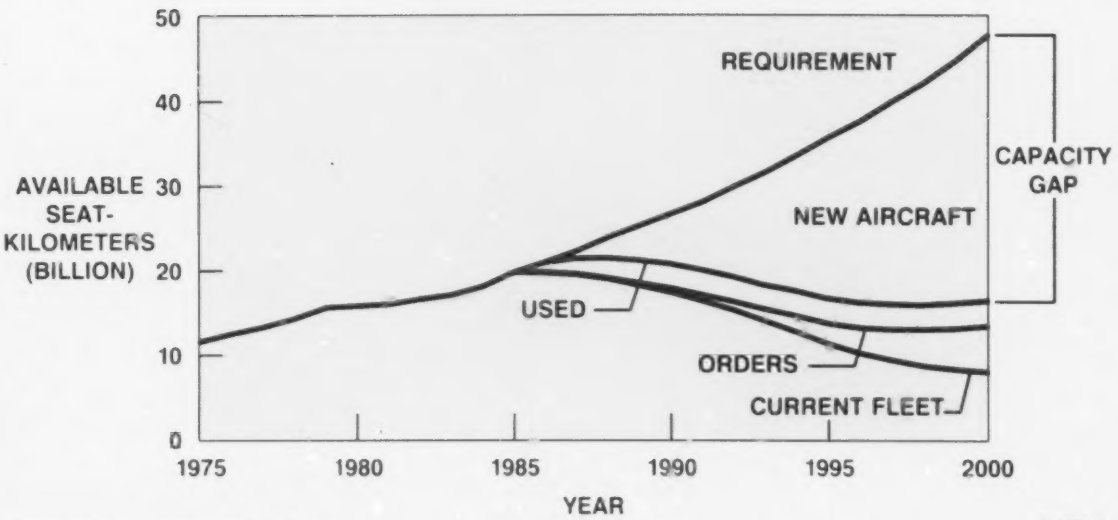
# TOTAL PASSENGER AIRCRAFT CAPACITY SUPPLY FORECAST

## ALL SERVICES




*1985 NON-U.S. ASKs ARE ESTIMATED

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## ASK GROWTH

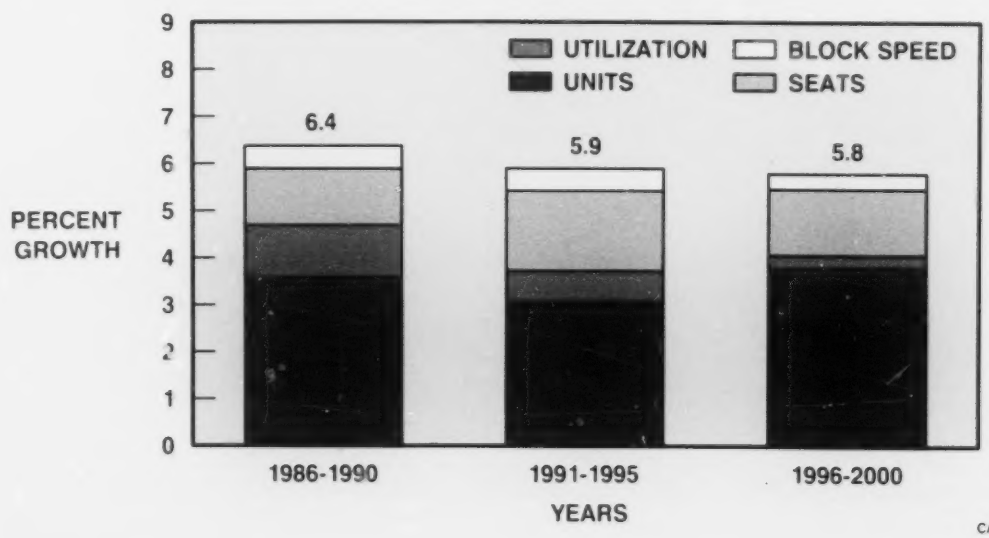
The capacity requirements in terms of available seat-kilometers are satisfied by changes in utilization, seat size, and aircraft units.

The block speed is also part of the productivity equation, but its slight growth is the result of assumed shifts in the airlines' route structures.

In the first 5 years of the forecast, productivity increases provide 44 percent of the capacity growth requirements. An increase in aircraft units accounts for the remaining 56 percent. Over the 15-year forecast period, utilization decreases — as a factor — as utilization levels reach projected optimums. Utilization increases provide 17 percent of the additional capacity requirements in 1986-1990, 11 percent in 1991-1995, and 5 percent in 1996-2000. Conversely, unit growth accounts for 56 percent of the additional capacity requirements in 1986-1990, 53 percent in 1991-1995, and 53 percent in 1996-2000.

World departures over the 15-year forecast period have an average annual growth of 3.3 percent. Growth in the U.S. is 2.8 percent, while Latin America, the Middle East, and Africa experience growth rates higher than the world average.

**TOTAL PASSENGER AIRCRAFT**
**AVERAGE ANNUAL ASK GROWTH AND FACTORS SATISFYING THIS GROWTH**

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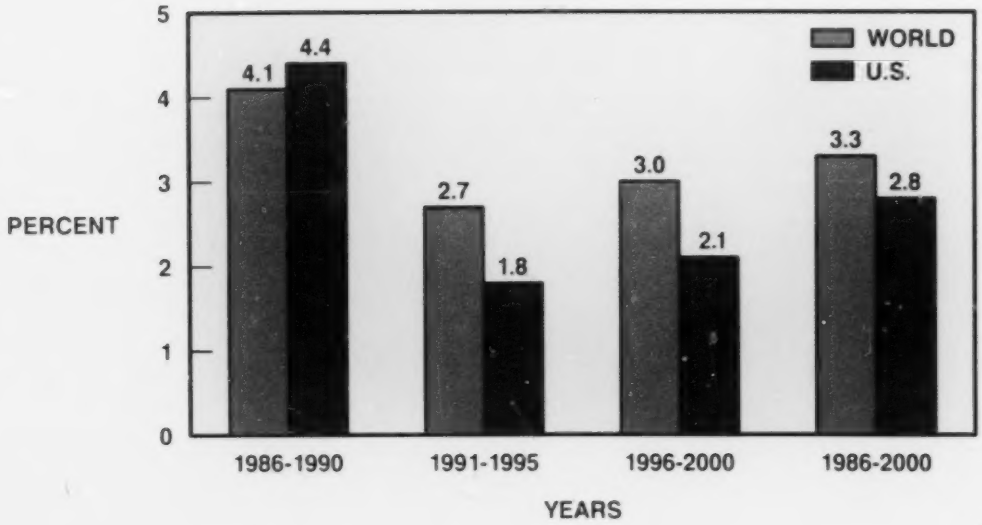
# WORLD
# DEPARTURE GROWTH
## 1986-2000

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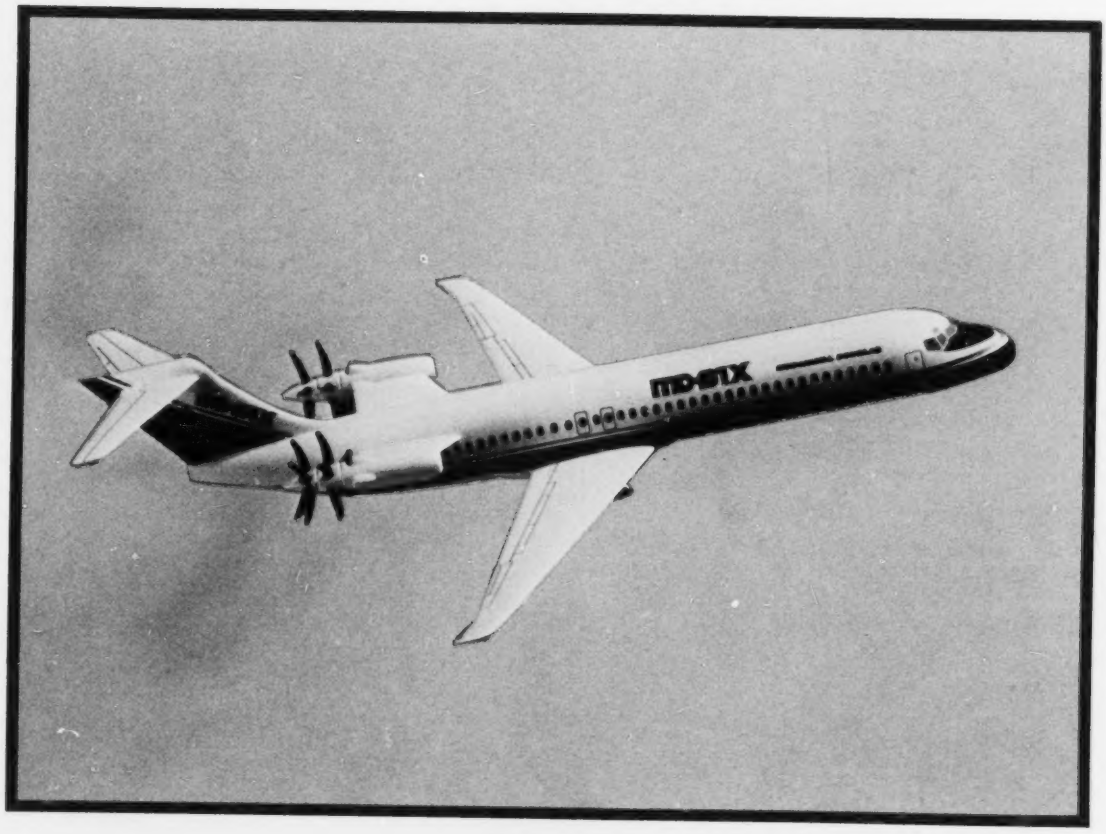
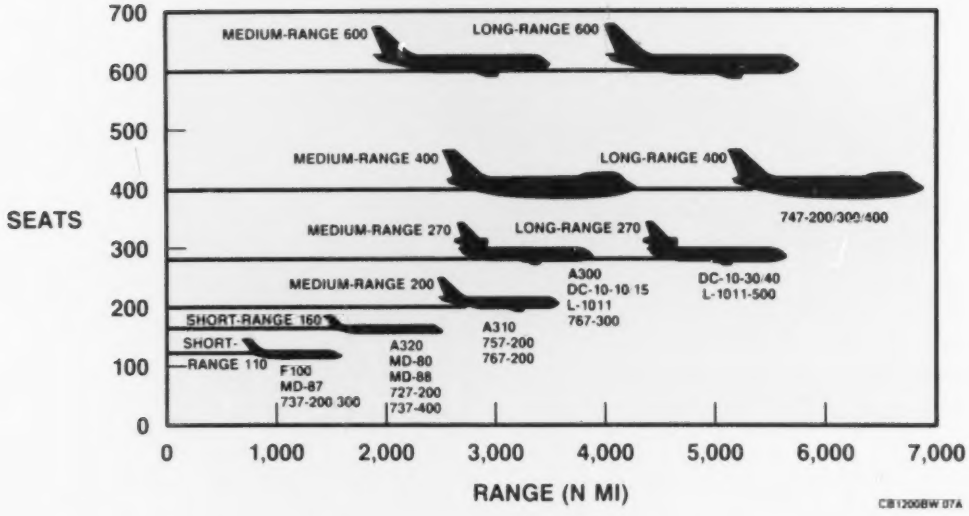
**MD-88**

# PASSENGER FLEET



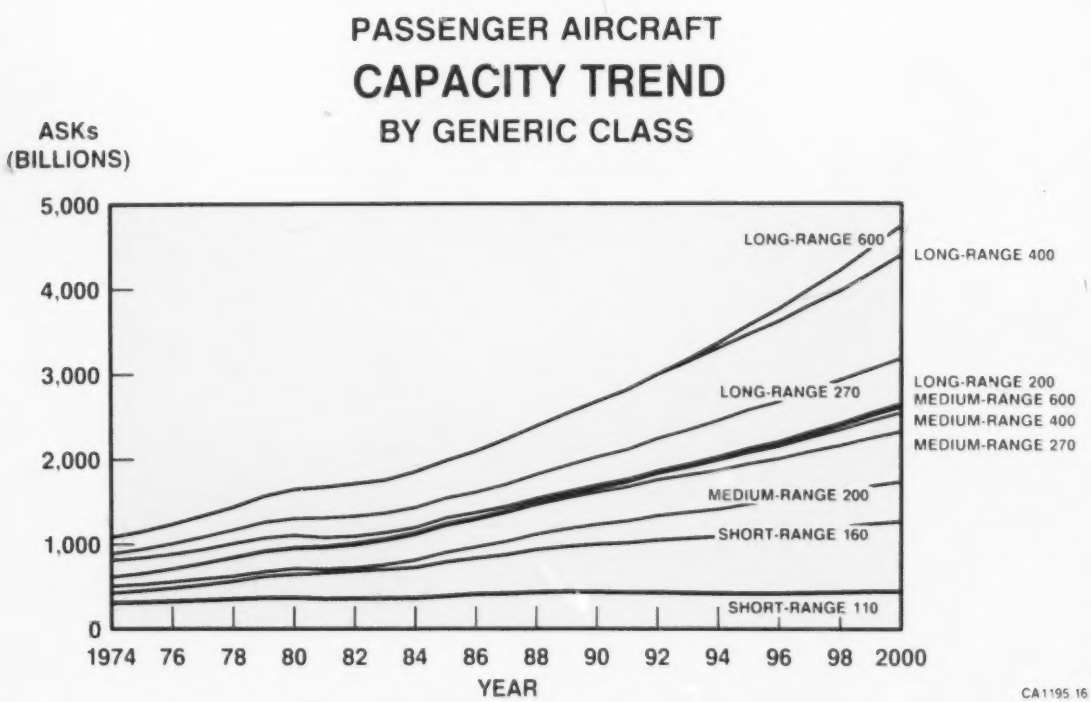

**MD-91X**

# PASSENGER AIRCRAFT
## GENERIC TYPES



## CAPACITY TREND

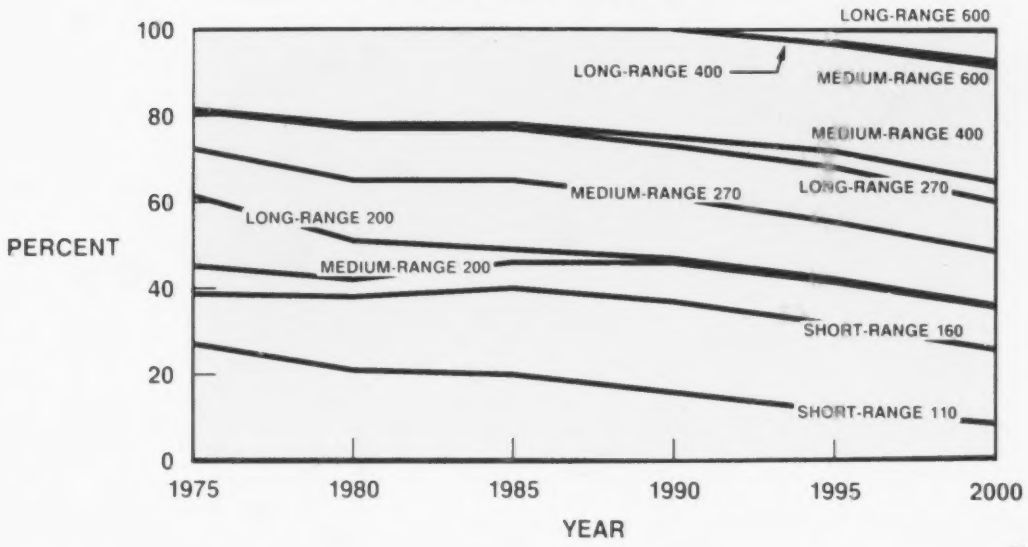
The forecast capacity trend demonstrates the increasing level of available seat-kilometers that will be provided by aircraft of 200 seats or more by the year 2000. However, the 110- and 160-seat class aircraft will continue to increase their capacity. By 2000, SR-110 and SR-160 class aircraft will account for 27 percent of total world capacity.



PASSENGER AIRCRAFT

# CAPACITY PERCENTAGES

## BY GENERIC CLASS

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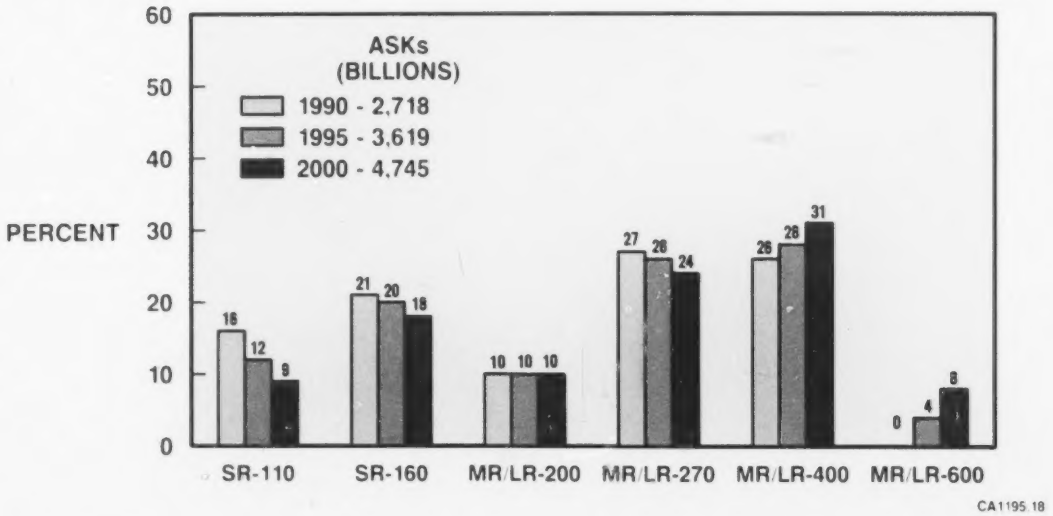
# FORECAST DISTRIBUTION OF AVAILABLE SEAT-KILOMETERS BY GENERIC CLASS

## TOTAL WORLD

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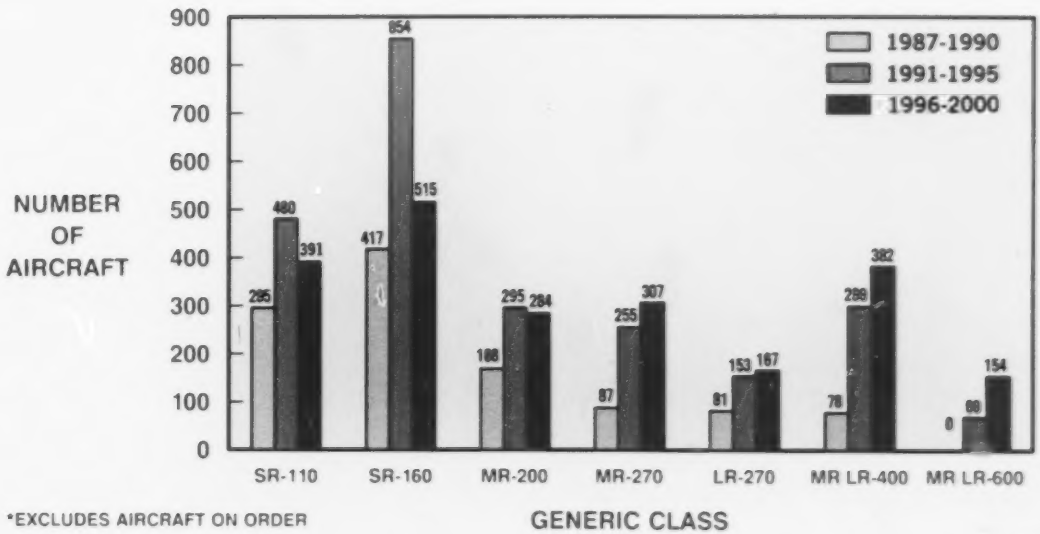
## NEW PASSENGER AIRCRAFT REQUIREMENTS

World demand for new aircraft will be mainly in the small, short-range aircraft category. Assumed retirements in the short-range generic classes account largely for this demand. The emphasis on hub-and-spoke systems has also led to increased demand for the small, short-range types.

Small short-range aircraft account for nearly 52 percent of the total demand for new aircraft, yet dollar value is 27 percent of the total value of equiment purchased (in constant 1986 dollars).

This trend is generally consistent throughout the 15-year forecast period. However, demand for larger aircraft increases in the latter half of the forecast period due to retirements of first-generation wide-body aircraft.

## NEW PASSENGER AIRCRAFT REQUIREMENTS
### BY GENERIC CLASS




*EXCLUDES AIRCRAFT ON ORDER

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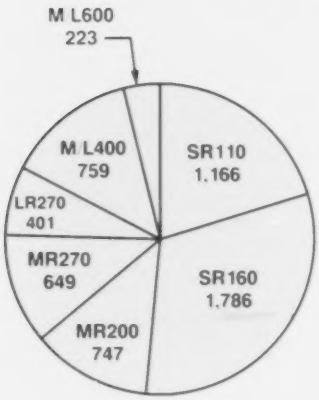
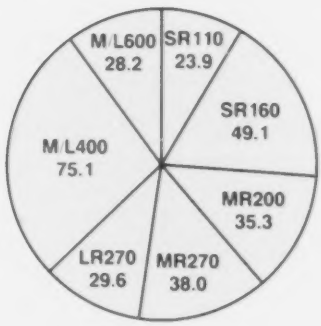
# NEW PASSENGER AIRCRAFT REQUIREMENTS*
# 1986-2000




5,731 UNITS




$279.2 BILLION
(CONSTANT 1986 DOLLARS)

* EXCLUDES AIRCRAFT CURRENTLY ON ORDER

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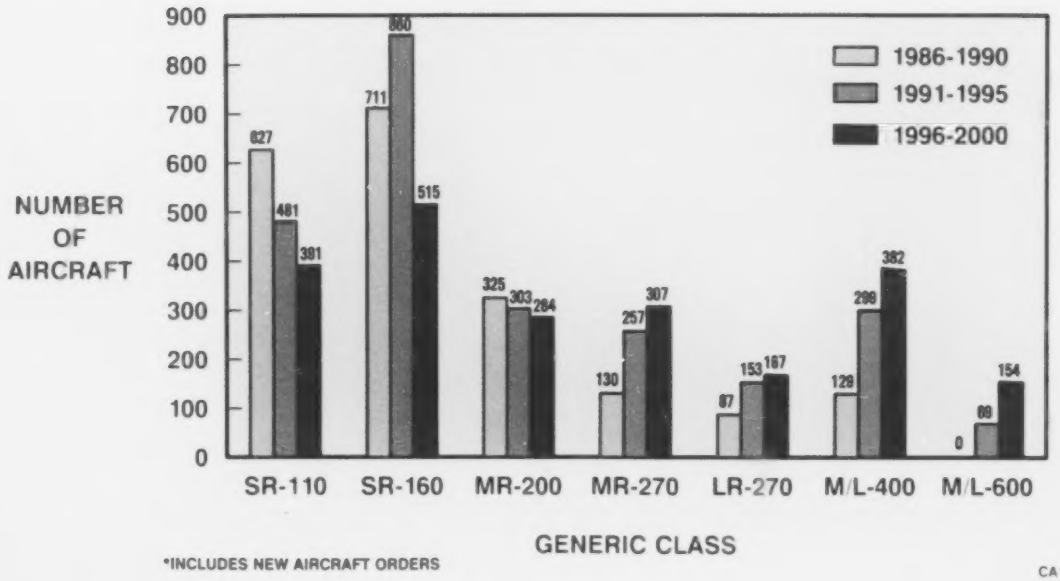
## PASSENGER AIRCRAFT DELIVERIES

Adding firm orders to the new aircraft requirements further substantiates the trend toward smaller aircraft during the first 10 years of the forecast period.

### TOTAL PASSENGER AIRCRAFT DELIVERIES*
### BY GENERIC CLASS




*INCLUDES NEW AIRCRAFT ORDERS

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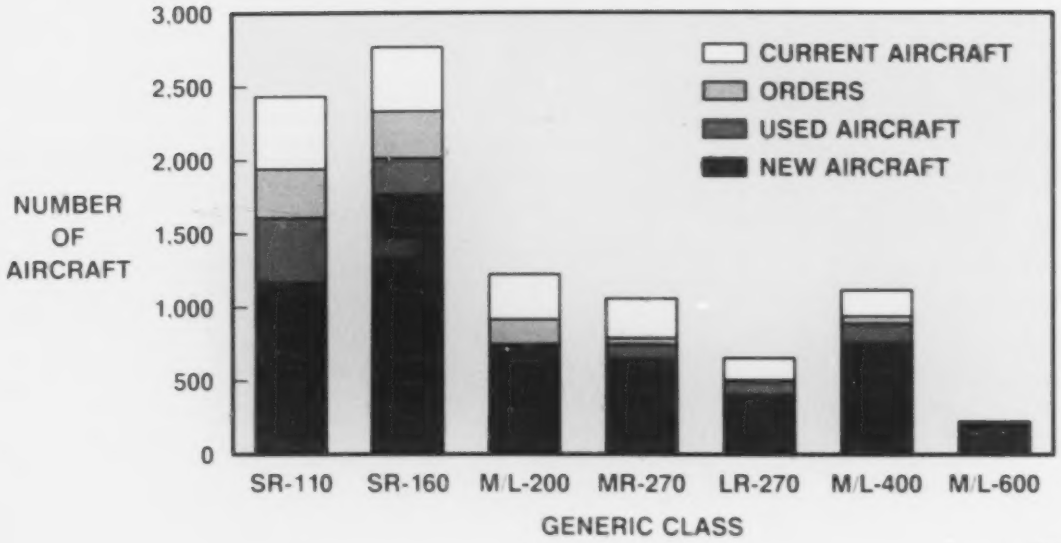
# TOTAL PASSENGER AIRCRAFT
# 2000 FLEET COMPOSITION
## BY GENERIC CLASS

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**MD-11 FREIGHTER**

# CARGO TRAFFIC AND CAPACITY

The world's air cargo industry continues to evolve at a rapid pace. With the proliferation of the U.S.-based integrated air cargo forwarders, this year's analysis of world air cargo fleet requirements reflects the addition of numerous small package/express parcel carriers as well as full-service integrated operators. Therefore, the results presented herein cannot be compared to those from previous years. The cargo traffic forecasts are based upon econometric analyses on a regional basis, and are defined according to International Air Transport Association (IATA) standards. As in the past, all fleet projections exclude feeder and nonjet services.

## TRAFFIC FORECAST

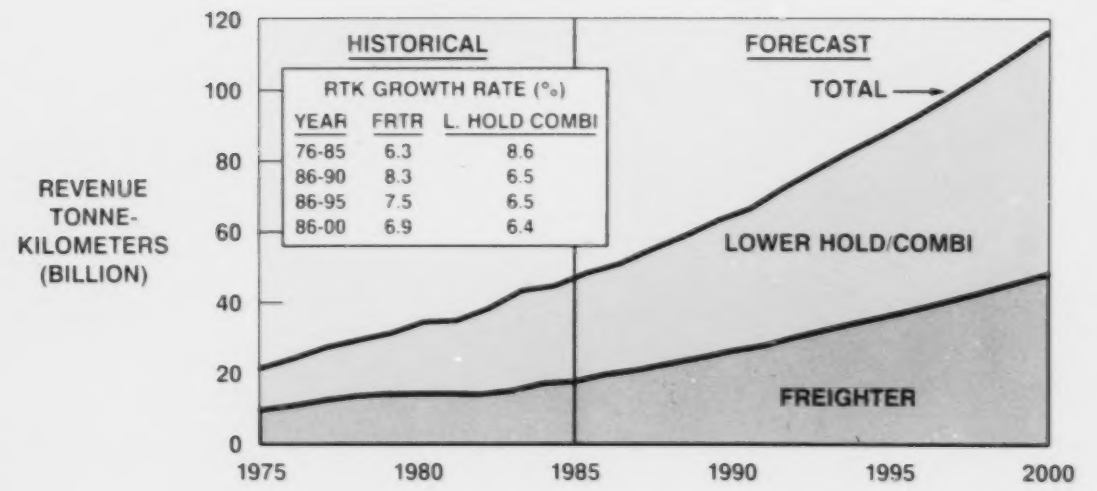
With increased economic stability projected for most of the world's developed economies, the environment for trade and consequently air cargo development shows considerable promise. It is expected that competition will intensify as greater service levels are demanded by shippers. Therefore, industry yields are anticipated to decline slightly in real terms over the forecast period. However, increased attention to cost control is expected to preserve industry profitability through implementation of two-tier wage scales, nonunion operations, and lean but efficient cargo operators.

Other factors stimulating air cargo growth are the moderation of jet fuel prices, capacity improvements attributed to the influx of aircraft that carry both passengers and freight on the main deck ("combi" aircraft), and the increase in U.S. gateway availability for non-U.S. airlines. However, directional traffic imbalances in many regions and relatively weak forecasted yields will continue to plague cargo carriers.

The recent decrease or elimination of freighter operations by some passenger-oriented airlines will present opportunities for all-cargo carriers, both new and existing. The long-range outlook for the air cargo industry will be further affected by the fully integrated carrier. This represents a new dimension of the market, in which traditional forwarders additionally provide for the complete door-to-door transportation of cargo (normally small packages/air express parcels), with an emphasis upon high service levels. Such services command exceptional yields. Although this market segment is undoubtedly the fastest growing overall, its importance has been obscured by the data traditionally used to analyze the air cargo industry. While weight and length of haul have normally been determinants of cargo activity, such measures are inadequate in analyzing this newly developed market segment where value and service are the key elements. This is proven by the fact that integrated carriers are estimated to account for at least two-thirds of domestic U.S. air cargo revenues, although they only carry one-third the total revenue tonne-kilometers. Originally a U.S. domestic service, integrated carriers have now moved into the North Atlantic market. The proliferation of such international door-to-door services is expected to continue, with new service extensions on the transpacific route planned for 1987.

The long-term outlook for air cargo development on a worldwide basis is for growth at an average rate of 6.6 percent, somewhat lower than the 7.7 percent rate experienced during the past 10 years. By the beginning of the 21st century, the world's air cargo will account for approximately 116 billion revenue tonne-kilometers annually, as shown. Growth during 1987 and 1991 is expected to slow to levels below the average due to recessionary conditions. These economic downturns, however, should not be as severe as those experienced in the early 1980s. With the industry emphasis on service, cargo transported on freighter aircraft is anticipated to develop at rates somewhat above those of combination aircraft (passenger/freight) operations, reversing the trend of the past 10 years. However, with the inherent distortions of the small package/express parcel segment with respect to weight as a measurement, the freighter share of the industry increases to only 42 percent from its existing 40 percent.

## TOTAL WORLD CARGO TRAFFIC
### (ALL SERVICES)

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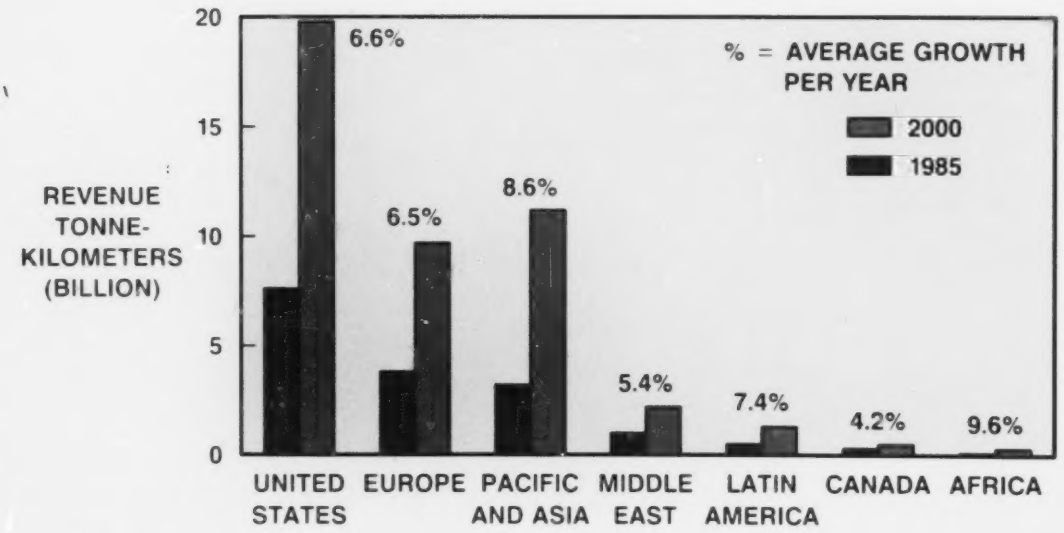
Considering freighter operations exclusively, airlines based in the Pacific and Asia will produce the greatest rate of air cargo growth among the major regions, with 8.6 percent annual increase, as shown. These carriers will therefore surpass the European operators by the end of this decade. U.S. and European freighter operations will develop at a considerably lower level, approximately 6.6 percent and 6.5 percent, respectively, over the forecast period.

## FREIGHTER REVENUE TONNE-KILOMETERS BY DOMICILED AREA

### (ALL SERVICES)

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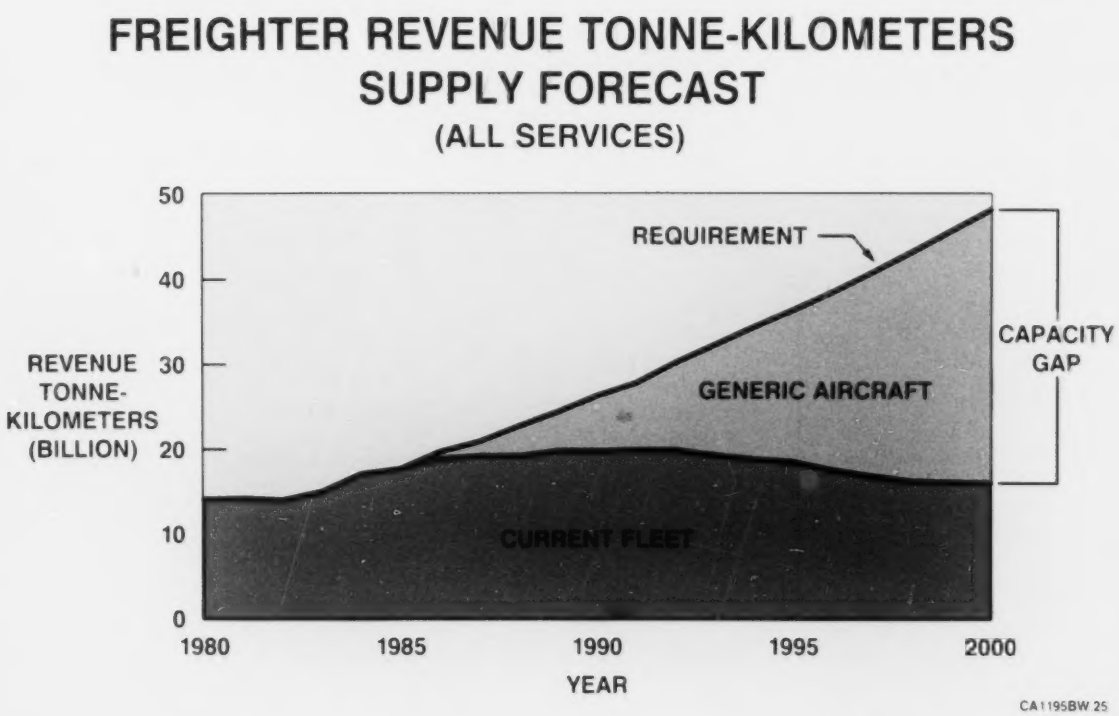
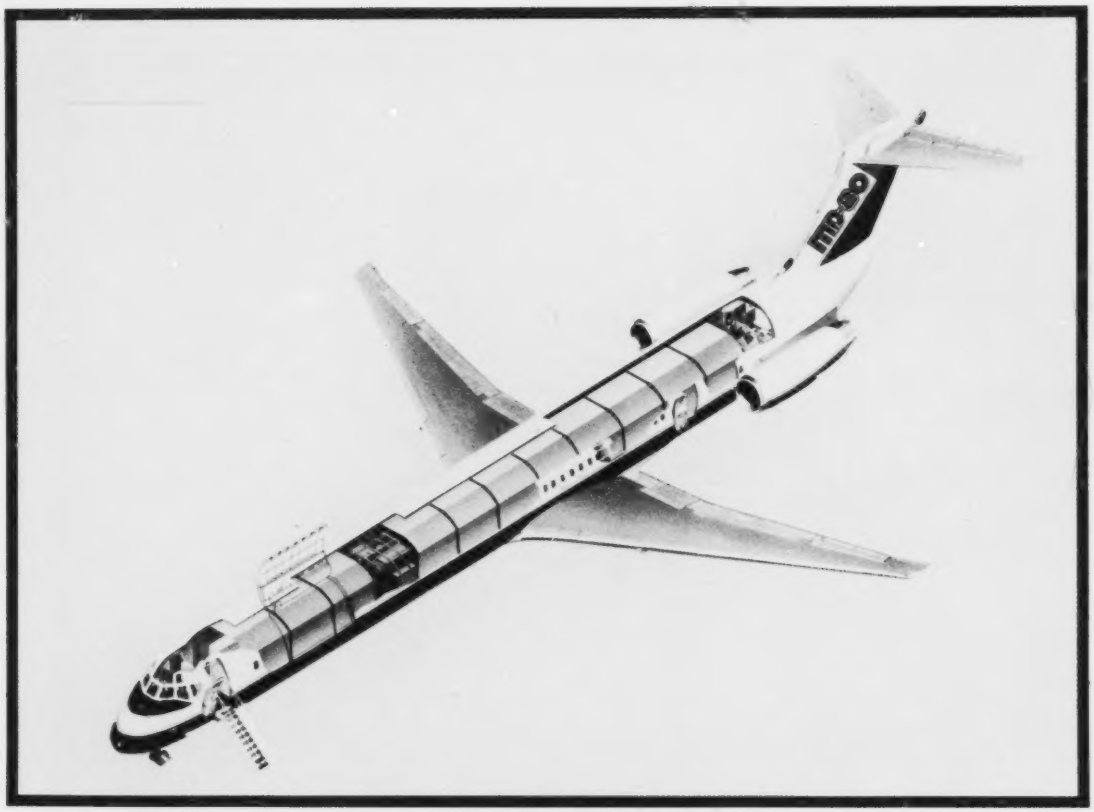
## FREIGHTER CAPACITY FORECAST

The world's requirement for freighter aircraft will continue to expand substantially despite the conservative freighter retirement schedule implemented. As shown, the revenue tonne-kilometers supplied by the current fleet, which also includes firm orders and options, decreases only 6 percent by the year 2000 (28 percent in terms of units). However, generic freighters providing over 30 billion RTKs will be needed to fill this capacity gap. It is believed that a majority of these freighters will be converted from used passenger aircraft.






**MD-80 FREIGHTER**

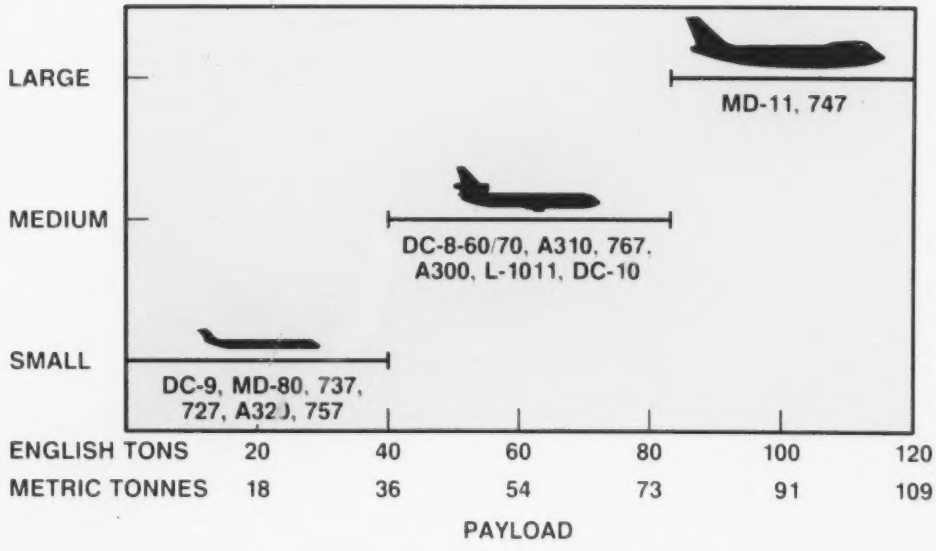
# FREIGHTER FLEET

CA1195BW 27

## FREIGHTER CLASSES

The three classifications of freighters used in this study are based upon payload, as shown. The medium freighter limits at 40 and 85 tons separate the three categories. The aircraft models noted below are representative of each class, but include other current and proposed aircraft.

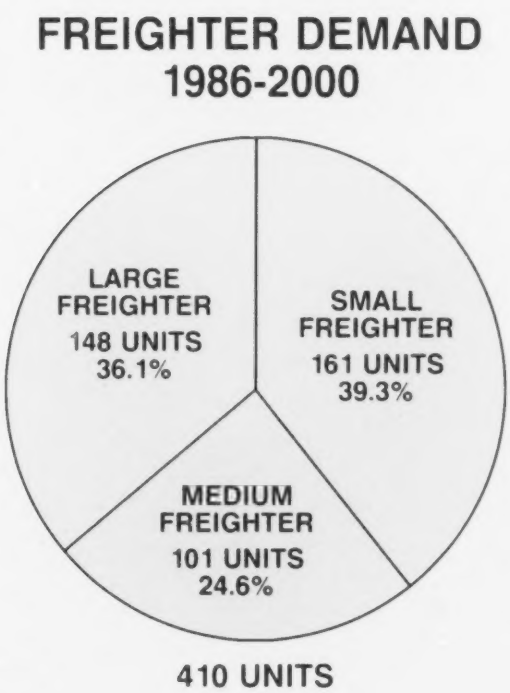
## GENERIC FREIGHTER CLASSES




CA1195.33

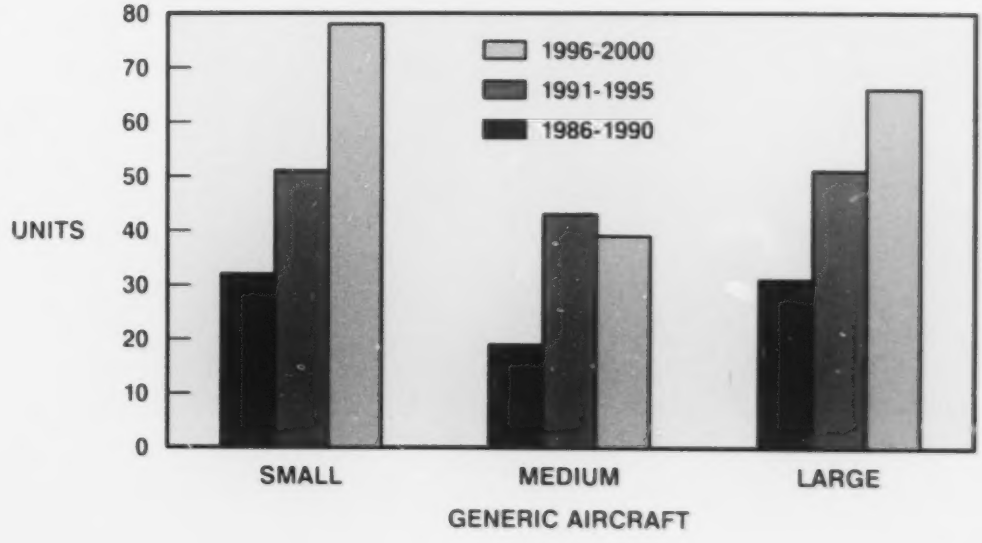
## FREIGHTER REQUIREMENTS

It is estimated that over the next 15 years a total of 410 additional freighter aircraft will be required on a worldwide basis after retirements are considered. Nearly 75 percent of the additional capacity required at the end of this time will be supplied by the large freighter category, although this group accounts for only 36 percent of the total new freighters required. The small freighters, which represent 39 percent of the additional units, will make up only 9 percent of the needed productive capacity. Despite the fact that most of the additional capacity will be met by converting used passenger aircraft to freighters, it is recognized that new freighters will also have a significant niche to fill, given their operating economies and efficiency.



The timing for additional freighter demand is shown by generic type. (A definition of generic aircraft is given in Appendix A.) Of the total 410 units projected through 2000, only 20 percent of the units will be required in the 1986-1990 period. This increases to 35 percent during 1991-1995. The final 5-year period of the forecast accounts for the largest share of required units, projected at 45 percent of the total.

## GENERIC FREIGHTER REQUIREMENTS BY FIVE-YEAR INCREMENTS

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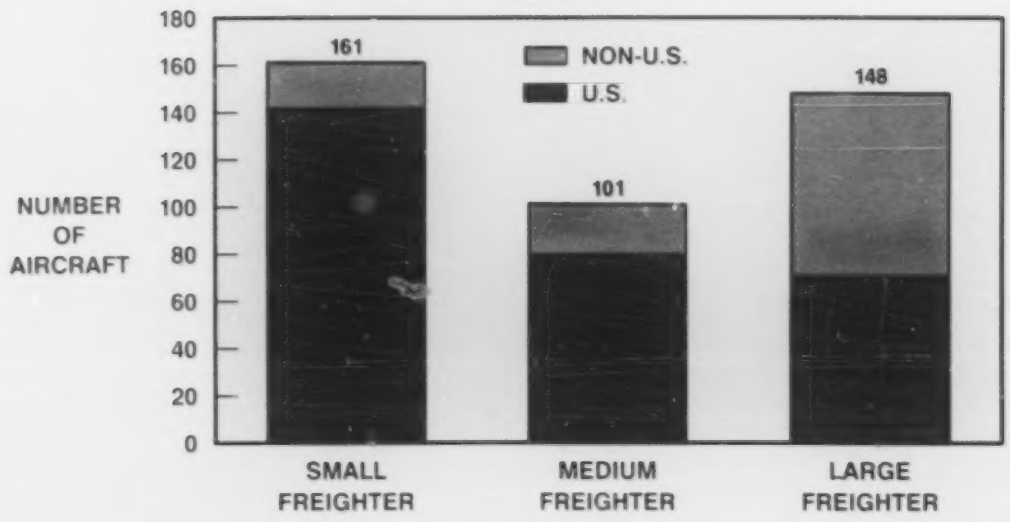
U.S. carriers will account for a high proportion of the world's freighter requirements, with an estimate of over 70 percent on an aggregate basis (293 units). U.S. domination of the small and medium freighter markets is evidenced by its projected shares of 88 percent and 79 percent, respectively. Non-U.S. operators, however, will account for most of the demand in the large freighter category.

The fully integrated carriers have produced a particularly noteworthy impact within the U.S. With the decline of freighter operations by U.S. combination airlines and the ascension of integrated cargo carriers, traditional airline freighter operations now represent only a segment of this transformed industry. Of the forecasted U.S. generic freighter requirements through 2000, integrated operators are expected to account for about 90 percent of the small freighter class, 70 percent of the medium category, and 50 percent of the large freighter group.

## FREIGHTER GENERIC AIRCRAFT BY DOMICILED AREA 1986-2000

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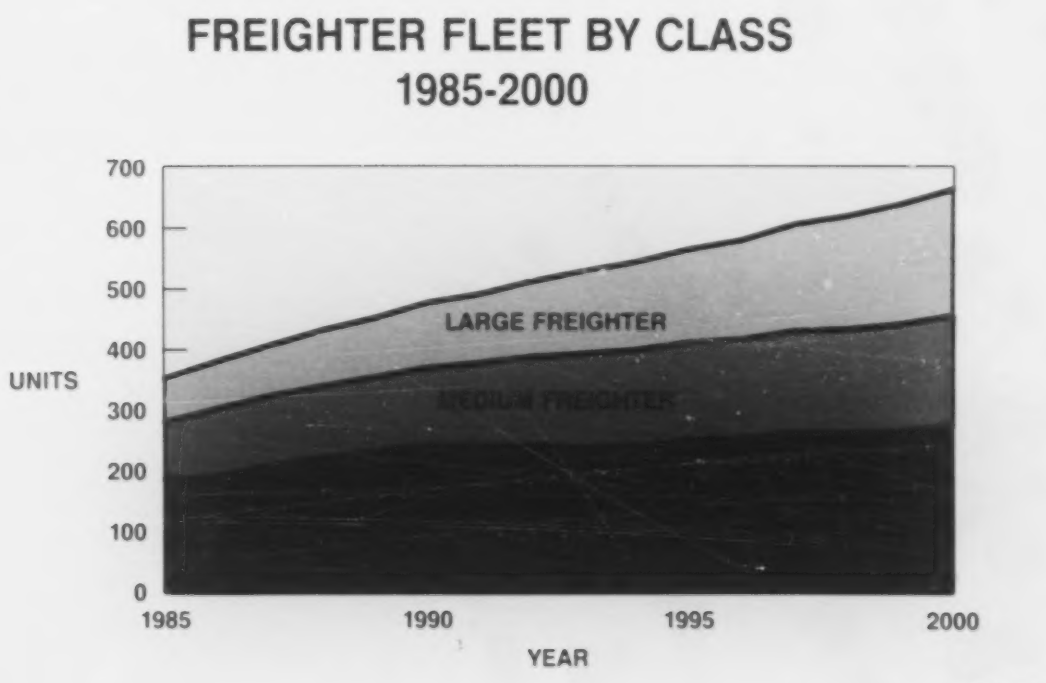
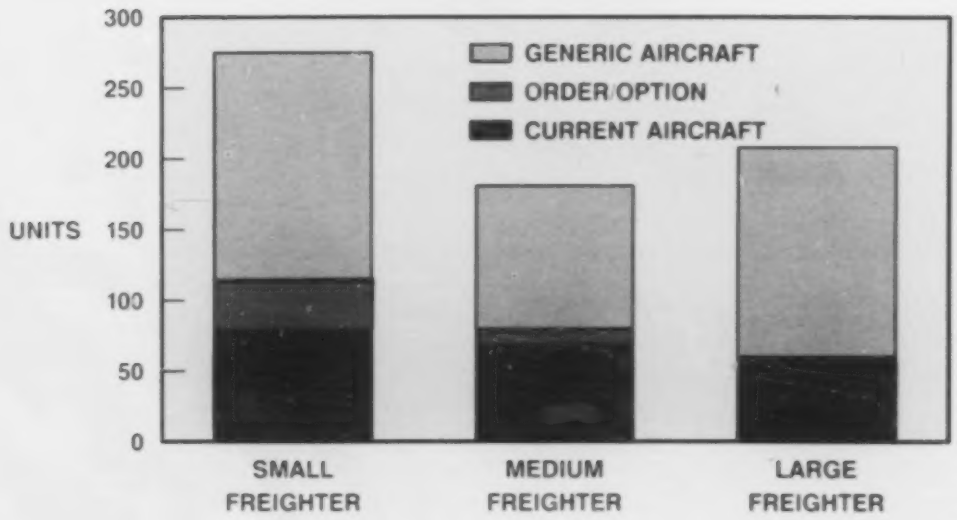
## WORLD FREIGHTER FLEET COMPOSITION

The world's active freighter fleet is projected to increase by nearly 90 percent between 1985 and 2000 in terms of units, as illustrated. These unit quantities include freighters currently operated less estimated retirements, freighters currently on order or option, along with new and used generic aircraft required to satisfy the forecasted cargo demand. The relative rate of expansion by freighter class will be directly correlated with aircraft size. With a continued emphasis on efficiency and operational economies, the large freighter class will increase in units by nearly 190 percent through the year 2000. The medium category will grow 90 percent during this period. Moreover, the small freighter fleet will demonstrate the slowest percentage growth at about 50 percent, although its unit increase will nevertheless be significant.



By the 21st century, the world's freighter fleet is projected to number 664 aircraft. Approximately 31 percent of that fleet will be aircraft which were in service at the end of 1985 (current aircraft). Specific aircraft for which there were firm orders or options in late 1985 account for 7 percent of the year 2000 fleet. The remaining 62 percent of the fleet will be generic aircraft (both new and used) that satisfy additional requirements. These data are separated by freighter class, as illustrated.

## FREIGHTER FLEET COMPOSITION IN YEAR 2000

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**MD-94X**

# APPENDICES

CA1196.35

## APPENDIX A
## DEFINITIONS

**AVAILABLE SEAT-KILOMETERS** – The product obtained by multiplying the number of passenger seats available on each flight stage by the flight stage distance.

**CURRENT FLEET** – Aircraft on hand as of December 31, 1985.

**DOMICILED AREA** – A geographic definition used to aggregate the total system traffic of all carriers whose home base lies within the geographic area.

**FREIGHTER SERVICE** – Refers to flights of aircraft carrying loads of revenue cargo (freight and mail) exclusively. All flights carrying one or more revenue passengers and flights listed in schedules as providing any passenger service are excluded.

**GENERIC AIRCRAFT** – A broad definition of seat size and range characteristics of current and future aircraft. The generic aircraft and typical annual capacity (ASKs in millions) are listed below. The table lists all specific aircraft members of each passenger class.

**Passenger Types**

SHORT-RANGE 110 – Low seating capacity, varying between 60 and 135, with a range up to 1,500 nautical miles. (168 million ASKs)

SHORT-RANGE 160 – Seating capacity from 136 to 175 with a range of 2,500 nautical miles. (282 million ASKs)

MEDIUM-RANGE 200 – Primarily a wide-body class with seating capacity from 176 to 225 and a range of 2,500 nautical miles. (418 million ASKs)

MEDIUM-RANGE 270 – Wide-body class seating from 226 to 310 with a range up to 3,500 nautical miles. (611 million ASKs)

LONG-RANGE 270 – A high-capacity wide-body class offering 226-310 seats with a range of 3,500 to 6,000 nautical miles. (747 million ASKs)

MEDIUM-RANGE 400 – Exclusively wide-body class with seating capacity from 311 to 470 and a range of 3,500 to 6,000 nautical miles. (1,116 million ASKs)

LONG-RANGE 400 – High-capacity wide-body class with seating capacity from 311 to 470 and a range of 3,500 to 6,000 nautical miles. (1,376 million ASKs)

MEDIUM-RANGE 600 – Stretched, high-capacity wide-body class with seating capacity from 471 to 600 and a range up to 4,500 nautical miles. (1,608 million ASKs)

LONG-RANGE 600 – High-capacity wide-body class with seating capacity from 471 to 600 and a range up to 6,000 nautical miles. (2,006 million ASKs)

**Cargo Types**

SMALL FREIGHTER – A cargo aircraft with lift capability of 36 metric tons (40 tons) or less. It includes the following types of aircraft: 757, 727-100/200, MD-80, and proposed cargo versions of the new 150-seat aircraft.

MEDIUM FREIGHTER – A cargo aircraft with lift capability between 36 metric tons (40 tons) and 77 metric tons (85 tons). It includes the DC-10, the DC-8-70, and the proposed A300, A310, and 767 class aircraft.

LARGE FREIGHTER – A cargo aircraft with lift capability of 77 metric tons (85 tons) and above. It includes the 747 and the proposed MD-11 class aircraft.

**LOWER HOLD/COMBI RTKs** – Freight carried below the main deck on a passenger flight or freight carried on the main deck and in the lower hold in "combi" operations.

**NONSCHEDULED SERVICE (Revenue)** – Charter flights and special flights performed for remuneration on an irregular basis.

**PRODUCTIVITY** – Measured in terms of available seat-kilometers for passenger aircraft and revenue tonne-kilometers for cargo aircraft.

**RETAINED (USED) AIRCRAFT** – An aircraft that is sold or leased by its operating carrier to another carrier within the study group.

**PERMANENTLY RETIRED** – An aircraft that is either sold or leased to a carrier outside of the study group or is assumed to be scrapped or grounded.

**REVENUE PASSENGER KILOMETERS** – Obtained by multiplying the number of revenue passengers carried on each flight by the flight distance.

**REVENUE PASSENGER LOAD FACTOR** – Revenue passenger-kilometers expressed as a percentage of available seat-kilometers.

**REVENUE TONNE (METRIC TON) KILOMETERS** – Obtained by multiplying the number of revenue metric tons carried on each flight by the flight distance.

**SCHEDULED SERVICE (Revenue)** – Scheduled flights which are open to the public and are made according to a published timetable, or so regularly or frequently as to constitute a recognizable systematic series, and extra flights occasioned by overflow traffic from the scheduled flights.

**SPECIFIC AIRCRAFT** – Existing and new types of aircraft for which orders have been contracted with a manufacturer.

# PASSENGER AIRCRAFT BY GENERIC CLASS

## SHORT RANGE 110

BAC 1-11-200
BAC 1-11-300
BAC 1-11-400
BAC 1-11-475
BAC 1-11-500
BAe 146-200
CARAVELLE 3
CARAVELLE 6N
CARAVELLE 6R
CARAVELLE 10B
CARAVELLE 10R
CARAVELLE 11R
CARAVELLE 12B
DC-9-10
DC-9-10MC
DC-9-10RC
DC-9-20
DC-9-30
DC-9-30CF
DC-9-30RC
DC-9-40
DC-9-50
F28-1000
F28-2000
F28-3000
F28-4000
F28-6000
F100
MD-87
TRIDENT 1C
TRIDENT 1E
TRIDENT 2E
TU-104
TU-134
727-100
727-100C
727-100QC
737-100
737-200
737-200C
737-200QC
737-300

## SHORT RANGE 160

A320
MD-80
MD-83
MD-88
MERCURY
TRIDENT 3B
727-200
737-400

## MEDIUM RANGE 200

A310-100
A310-200
A310-300
COMET 4
COMET 4B
COMET 4C
CONCORDE
CV-880
CV-900A
DC-8-20
DC-8-30
DC-8-40
DC-8-50
DC-8-50CF
DC-8-61
DC-8-61CF
DC-8-62
DC-8-62CF
DC-8-63
DC-8-63CF
DC-8-63PF
DC-8-71
DC-8-71CF
DC-8-73
DC-8-73CF
IL-62
SUPER VC-10
TU-154
VC-10
707-120
707-120B
707-138B
707-220
707-320
707-320B
707-320C
707-420
720
720B
757-200
767-200

## LONG RANGE 200

DC-8-63
DC-8-63CF
DC-8-63PF
DC-8-73
DC-8-73CF
767-200ER

## MEDIUM RANGE 270

A300B1
A300B2
A300B2K
A300B4
A300B600
A300C4
DC-10-10
DC-10-10CF
DC-10-15
DC-10-30
DC-10-30CF
DC-10-40
L-1011-1
L-1011-100
L-1011-200
L-1011-500
747-SP
747-200CSCD
747-200SCD
767-300

## LONG RANGE 270

A300B600
DC-10-30
DC-10-30CF
DC-10-30ER
DC-10-40
IL-86
L-1011-500
747SP
747-200CSCD
747-200FSCD
747-200SCD

## MEDIUM RANGE 400

747-100
747-100RF
747-100SR
747-200
747-200C
747-300
747-300C
747-400

## LONG RANGE 400

747-100
747-100RF
747-200
747-200C
747-200R
747-300
747-300C
747-400

## APPENDIX B
## TRAFFIC DETAIL

### WORLD PASSENGER TRAFFIC
### HISTORY AND FORECAST, ALL SERVICES
(RPKs AND ASKs IN BILLIONS)

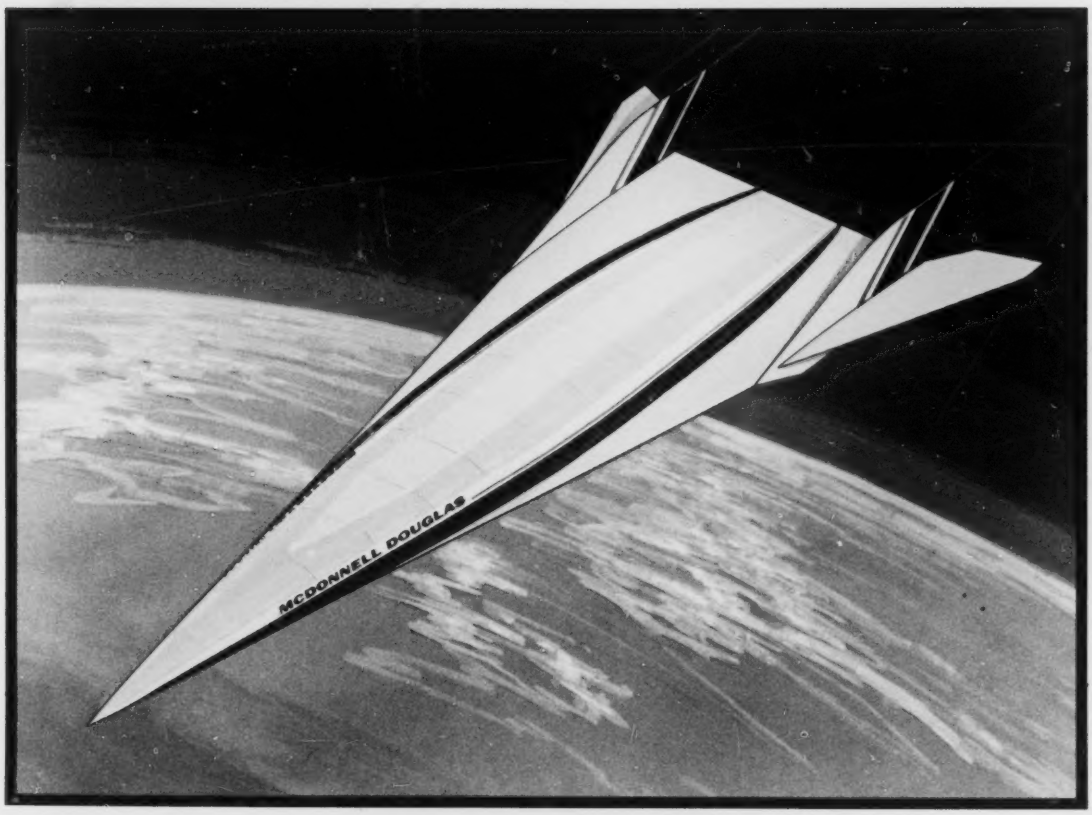
| | Total | | | | | U.S. Carriers | | | | | Non-U.S. Carriers | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | RPKs | Annual Growth Rate (RPKs) | ASKs | Annual Growth Rate (ASKs) | Load Factor | RPKs | Annual Growth Rate (RPKs) | ASKs | Annual Growth Rate (ASKs) | Load Factor | RPKs | Annual Growth Rate (RPKs) | ASKs | Annual Growth Rate (ASKs) | Load Factor |
| 1971 | 454.7 | 0.0 | 857.0 | 0.0 | 53.0 | 251.7 | 0.0 | 487.5 | 0.0 | 51.6 | 203.0 | 0.0 | 369.5 | 0.0 | 54.9 |
| 1972 | 523.8 | 15.1 | 930.0 | 8.5 | 56.3 | 278.3 | 10.5 | 501.4 | 2.8 | 55.5 | 245.4 | 20.9 | 428.5 | 15.9 | 57.2 |
| 1973 | 602.4 | 15.0 | 1051.0 | 13.0 | 57.3 | 300.2 | 7.8 | 549.4 | 9.5 | 54.6 | 302.2 | 23.1 | 501.5 | 17.0 | 60.2 |
| 1974 | 640.0 | 6.2 | 1084.9 | 3.2 | 58.9 | 300.1 | 0.0 | 528.2 | −3.8 | 56.8 | 339.8 | 12.4 | 556.7 | 10.9 | 61.0 |
| 1975 | 676.8 | 5.7 | 1161.8 | 7.0 | 58.2 | 298.3 | −0.6 | 533.2 | 0.9 | 55.9 | 378.4 | 11.3 | 628.6 | 12.9 | 60.2 |
| 1976 | 739.6 | 9.2 | 1249.4 | 7.5 | 59.2 | 327.6 | 9.8 | 569.2 | 6.7 | 57.5 | 412.0 | 8.8 | 680.2 | 8.2 | 60.5 |
| 1977 | 810.3 | 9.5 | 1334.0 | 6.7 | 60.7 | 354.3 | 8.1 | 610.4 | 7.2 | 58.0 | 455.9 | 10.6 | 723.5 | 6.3 | 63.0 |
| 1978 | 920.2 | 13.5 | 1437.1 | 7.7 | 64.0 | 405.6 | 14.4 | 645.4 | 5.7 | 62.8 | 514.5 | 12.8 | 791.7 | 9.4 | 64.9 |
| 1979 | 1022.1 | 11.0 | 1567.3 | 9.0 | 65.2 | 446.7 | 10.1 | 699.5 | 8.3 | 63.8 | 575.4 | 11.8 | 867.8 | 9.6 | 66.3 |
| 1980 | 1031.5 | 0.9 | 1655.3 | 5.6 | 62.3 | 430.1 | −3.7 | 720.0 | 2.9 | 59.7 | 601.4 | 4.5 | 935.2 | 7.7 | 64.3 |
| 1981 | 1045.7 | 1.3 | 1672.2 | 1.0 | 62.5 | 416.2 | −3.2 | 701.9 | −2.5 | 59.3 | 629.4 | 4.6 | 970.2 | 3.7 | 64.8 |
| 1982 | 1072.9 | 2.6 | 1711.4 | 2.3 | 62.6 | 434.9 | 4.4 | 724.9 | 3.2 | 60.0 | 637.9 | 1.3 | 986.5 | 1.6 | 64.6 |
| 1983 | 1117.0 | 4.1 | 1760.6 | 2.8 | 63.4 | 467.2 | 7.4 | 760.3 | 4.8 | 61.4 | 649.8 | 1.8 | 1000.2 | 1.4 | 64.9 |
| 1984 | 1188.4 | 6.4 | 1862.0 | 5.7 | 63.8 | 496.5 | 6.2 | 797.3 | 4.8 | 62.2 | 691.9 | 6.4 | 1064.6 | 6.4 | 64.9 |
| 1985 | 1282.9 | 8.0 | 1995.5 | 7.2 | 64.3 | 540.5 | 8.9 | 902.1 | 13.1 | 59.9 | 742.4 | 7.3 | 1093.4 | 2.7 | 67.9 |
| 1986 | 1382.0 | 7.7 | 2130.4 | 6.8 | 64.5 | 582.9 | 7.8 | 964.5 | 6.9 | 60.4 | 799.1 | 7.6 | 1165.9 | 6.6 | 68.5 |
| 1987 | 1450.8 | 5.0 | 2261.6 | 6.2 | 64.2 | 608.2 | 4.3 | 1015.2 | 5.3 | 59.9 | 842.6 | 5.4 | 1246.4 | 6.9 | 67.6 |
| 1988 | 1572.9 | 8.4 | 2421.0 | 7.0 | 65.0 | 661.7 | 8.8 | 1088.4 | 7.2 | 60.8 | 911.2 | 8.1 | 1332.6 | 6.9 | 68.4 |
| 1989 | 1679.4 | 6.8 | 2568.7 | 6.1 | 65.4 | 701.7 | 6.0 | 1141.1 | 4.8 | 61.5 | 977.7 | 7.3 | 1427.6 | 7.1 | 68.5 |
| 1990 | 1794.5 | 6.9 | 2718.2 | 5.8 | 66.0 | 743.4 | 5.9 | 1192.8 | 4.5 | 62.3 | 1051.1 | 7.5 | 1525.4 | 6.8 | 68.9 |
| 1991 | 1883.2 | 4.9 | 2857.7 | 5.1 | 65.9 | 770.9 | 3.7 | 1238.4 | 3.8 | 62.3 | 1112.3 | 5.8 | 1619.3 | 6.2 | 68.7 |
| 1992 | 2042.3 | 8.4 | 3032.3 | 6.1 | 67.4 | 829.2 | 7.6 | 1299.7 | 4.9 | 63.8 | 1213.1 | 9.1 | 1732.6 | 7.0 | 70.0 |
| 1993 | 2165.9 | 6.1 | 3208.8 | 5.8 | 67.5 | 878.2 | 5.9 | 1355.1 | 4.3 | 64.8 | 1287.7 | 6.1 | 1853.7 | 7.0 | 69.5 |
| 1994 | 2304.5 | 6.4 | 3399.0 | 5.9 | 67.8 | 928.5 | 5.7 | 1413.7 | 4.3 | 65.7 | 1376.0 | 6.9 | 1985.3 | 7.1 | 69.3 |
| 1995 | 2464.4 | 6.9 | 3618.8 | 6.5 | 68.1 | 977.6 | 5.3 | 1484.8 | 5.0 | 65.8 | 1486.8 | 8.1 | 2134.0 | 7.5 | 69.7 |
| 1996 | 2601.5 | 5.6 | 3803.4 | 5.1 | 68.4 | 1015.7 | 3.9 | 1541.3 | 3.8 | 65.9 | 1585.8 | 6.7 | 2262.1 | 6.0 | 69.5 |
| 1997 | 2771.5 | 6.5 | 4034.2 | 6.1 | 68.7 | 1063.1 | 4.7 | 1610.8 | 4.5 | 66.0 | 1708.4 | 7.7 | 2423.4 | 7.1 | 69.5 |
| 1998 | 2939.5 | 6.1 | 4260.2 | 5.6 | 69.0 | 1107.9 | 4.2 | 1673.6 | 3.9 | 66.2 | 1831.6 | 7.2 | 2586.6 | 6.7 | 69.4 |
| 1999 | 3128.2 | 6.4 | 4520.6 | 6.1 | 69.2 | 1164.3 | 5.1 | 1750.9 | 4.6 | 66.5 | 1963.9 | 7.2 | 2769.7 | 7.1 | 70.9 |
| 2000 | 3284.9 | 5.0 | 4745.0 | 5.0 | 69.5 | 1227.8 | 5.5 | 1838.0 | 5.0 | 66.8 | 2057.1 | 4.7 | 2907.0 | 4.9 | 71.3 |

## WORLD CARGO TRAFFIC
## HISTORY AND FORECAST, ALL SERVICES
(RTKs IN BILLIONS)

| | Total | | | | U.S. Carriers | | | | Non-U.S. Carriers | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | FRTR RTKs | Annual Growth Rate (RTKs) | Total RTKs | Annual Growth Rate (RTKs) | FRTR RTKs | Annual Growth Rate (RTKs) | Total RTKs | Annual Growth Rate (RTKs) | FRTR RTKs | Annual Growth Rate (RTKs) | Total RTKs | Annual Growth Rate (RTKs) |
| 1971 | 7.7 | - | 15.6 | | 5.6 | | 9.1 | | 2.1 | | 6.4 | |
| 1972 | 8.3 | 7.8 | 17.4 | 11.7 | 5.7 | 2.9 | 9.7 | 5.7 | 2.5 | 21.1 | 7.7 | 20.1 |
| 1973 | 8.8 | 5.9 | 19.4 | 11.5 | 5.4 | -5.7 | 9.7 | 0.6 | 3.3 | 32.3 | 9.7 | 25.0 |
| 1974 | 9.3 | 5.3 | 21.0 | 7.9 | 5.2 | -3.8 | 9.7 | -0.4 | 4.0 | 20.2 | 11.3 | 16.4 |
| 1975 | 9.6 | 3.1 | 21.4 | 1.8 | 4.8 | -7.2 | 9.2 | -4.5 | 4.7 | 16.5 | 12.1 | 7.2 |
| 1976 | 10.8 | 13.2 | 24.2 | 13.2 | 5.0 | 3.7 | 9.8 | 6.1 | 5.8 | 23.0 | 14.4 | 18.7 |
| 1977 | 12.3 | 13.9 | 27.4 | 12.9 | 5.7 | 13.0 | 11.0 | 12.4 | 6.6 | 14.7 | 16.3 | 13.2 |
| 1978 | 13.6 | 10.2 | 29.5 | 8.0 | 6.2 | 9.5 | 11.4 | 3.0 | 7.4 | 10.7 | 18.1 | 11.3 |
| 1979 | 14.2 | 4.5 | 31.5 | 6.6 | 6.3 | 1.8 | 11.7 | 2.6 | 7.9 | 6.7 | 19.8 | 9.2 |
| 1980 | 14.3 | 0.7 | 32.8 | 4.1 | 6.2 | -1.3 | 11.6 | -0.8 | 8.1 | 2.5 | 21.2 | 7.0 |
| 1981 | 14.4 | 0.4 | 34.7 | 5.7 | 6.1 | -2.5 | 11.6 | 0.6 | 8.3 | 2.7 | 23.0 | 8.5 |
| 1982 | 14.2 | -1.1 | 35.1 | 1.2 | 6.0 | -1.5 | 11.5 | -1.1 | 8.2 | -0.7 | 23.6 | 2.3 |
| 1983 | 15.0 | 5.6 | 38.4 | 9.4 | 6.7 | 11.7 | 12.9 | 12.2 | 8.3 | 1.2 | 25.5 | 8.1 |
| 1984 | 17.1 | 14.6 | 43.4 | 13.2 | 7.8 | 16.4 | 14.6 | 13.2 | 9.3 | 12.0 | 28.8 | 12.9 |
| 1985 | 17.7 | 3.2 | 44.7 | 2.9 | 8.0 | 2.6 | 14.5 | -0.7 | 9.7 | 4.3 | 30.2 | 4.9 |
| 1986 | 19.7 | 11.6 | 48.5 | 8.5 | 9.1 | 13.7 | 15.8 | 9.0 | 10.6 | 9.3 | 32.7 | 8.3 |
| 1987 | 20.9 | 5.8 | 50.9 | 5.1 | 9.6 | 5.5 | 16.5 | 4.4 | 11.3 | 6.6 | 34.4 | 5.2 |
| 1988 | 22.7 | 8.7 | 55.1 | 8.1 | 10.5 | 9.4 | 17.8 | 7.9 | 12.2 | 8.0 | 37.3 | 8.4 |
| 1989 | 24.4 | 7.5 | 58.9 | 7.0 | 11.3 | 7.6 | 18.9 | 6.2 | 13.1 | 7.4 | 40.0 | 7.2 |
| 1990 | 26.3 | 7.8 | 63.2 | 7.3 | 12.2 | 8.0 | 20.1 | 6.3 | 14.1 | 7.6 | 43.1 | 7.8 |
| 1991 | 27.8 | 5.9 | 66.7 | 5.4 | 12.9 | 5.7 | 21.1 | 5.0 | 14.9 | 5.7 | 45.6 | 5.8 |
| 1992 | 30.2 | 8.3 | 72.3 | 8.5 | 13.9 | 7.8 | 22.5 | 6.6 | 16.3 | 9.4 | 49.8 | 9.2 |
| 1993 | 32.3 | 7.0 | 77.5 | 7.1 | 14.7 | 5.7 | 23.8 | 5.8 | 17.6 | 8.0 | 53.7 | 7.8 |
| 1994 | 34.4 | 6.6 | 82.6 | 6.6 | 15.6 | 6.1 | 25.1 | 5.5 | 18.8 | 6.8 | 57.5 | 7.1 |
| 1995 | 36.4 | 5.8 | 87.3 | 5.6 | 16.4 | 5.1 | 26.4 | 5.2 | 20.0 | 6.4 | 60.9 | 5.9 |
| 1996 | 38.5 | 5.9 | 92.4 | 5.9 | 17.3 | 5.5 | 27.7 | 4.9 | 21.2 | 6.0 | 64.7 | 6.2 |
| 1997 | 40.8 | 5.9 | 97.9 | 5.9 | 18.2 | 5.2 | 29.1 | 5.1 | 22.6 | 6.6 | 68.8 | 6.3 |
| 1998 | 43.2 | 5.8 | 103.7 | 5.9 | 19.1 | 4.9 | 30.5 | 4.8 | 24.1 | 6.6 | 73.2 | 6.4 |
| 1999 | 45.7 | 5.9 | 109.9 | 6.0 | 20.1 | 5.2 | 32.0 | 4.9 | 25.6 | 6.2 | 77.9 | 6.4 |
| 2000 | 48.2 | 5.5 | 116.3 | 5.8 | 21.1 | 5.0 | 33.5 | 4.7 | 27.1 | 5.9 | 82.8 | 6.3 |

## TOTAL WORLD
## PASSENGER JET AIRCRAFT REQUIREMENT BY GENERIC CLASS

| | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHORT RANGE 110 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | (98) | (122) | (150) | (153) | (161) | (160) | (125) | (92) | (90) | (81) | (44) | (32) | (31) | (31) | (1,370) |
| Orders | | 130 | 100 | 66 | 27 | 9 | 1 | | | | | | | | | | 333 |
| Generic Aircraft | | | 28 | 76 | 103 | 88 | 107 | 115 | 85 | 78 | 95 | 94 | 82 | 75 | 71 | 69 | 1,166 |
| End-of-year Total | 2,364 | 2,494 | 2,524 | 2,544 | 2,524 | 2,468 | 2,415 | 2,370 | 2,330 | 2,316 | 2,321 | 2,334 | 2,372 | 2,415 | 2,455 | 2,493 | |
| SHORT RANGE 160 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | (23) | (53) | (64) | (83) | (71) | (90) | (94) | (92) | (80) | (47) | (28) | (14) | 0 | 0 | (739) |
| Orders | | 84 | 56 | 67 | 59 | 28 | 6 | | | | | | | | | | 300 |
| Generic Aircraft | | | 69 | 117 | 93 | 138 | 131 | 183 | 175 | 172 | 193 | 107 | 127 | 96 | 97 | 88 | 1,786 |
| End-of-year Total | 1,405 | 1,489 | 1,591 | 1,722 | 1,810 | 1,893 | 1,959 | 2,052 | 2,133 | 2,213 | 2,326 | 2,386 | 2,485 | 2,567 | 2,664 | 2,752 | |
| MED/LONG RANGE 200 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | (21) | (12) | 0 | (1) | (9) | (5) | (12) | (10) | (4) | 0 | | | | (7) | (81) |
| Orders | | 73 | 35 | 25 | 13 | 11 | 8 | | | | | | | | | | 165 |
| Generic Aircraft | | | 31 | 47 | 45 | 45 | 55 | 70 | 54 | 47 | 69 | 48 | 64 | 53 | 59 | 60 | 747 |
| End-of-year Total | 569 | 642 | 687 | 747 | 805 | 860 | 914 | 979 | 1,021 | 1,058 | 1,123 | 1,171 | 1,235 | 1,288 | 1,347 | 1,400 | |
| MEDIUM RANGE 270 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | (10) | (14) | (11) | (13) | (12) | (13) | (14) | (36) | (25) | (17) | (26) | (20) | (4) | (12) | (227) |
| Orders | | 18 | 15 | 4 | 4 | 2 | 2 | | | | | | | | | | 45 |
| Generic Aircraft | | | 12 | 16 | 30 | 29 | 46 | 44 | 44 | 55 | 66 | 54 | 69 | 58 | 66 | 60 | 649 |
| End-of-year Total | 566 | 584 | 601 | 607 | 630 | 648 | 684 | 715 | 745 | 764 | 805 | 842 | 885 | 923 | 985 | 1,033 | |
| LONG RANGE 270 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | | | | | | 0 | (7) | (7) | (6) | (16) | (15) | (14) | (7) | (8) | (80) |
| Orders | | 3 | 2 | 1 | | | | | | | | | | | | | 6 |
| Generic Aircraft | | | 14 | 11 | 31 | 25 | 20 | 33 | 33 | 31 | 36 | 32 | 39 | 32 | 27 | 37 | 401 |
| End-of-year Total | 308 | 311 | 327 | 339 | 370 | 395 | 415 | 448 | 474 | 498 | 528 | 544 | 568 | 586 | 606 | 635 | |
| MED/LONG RANGE 400 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | | | | | | 0 | (23) | (19) | (22) | (26) | (14) | (9) | (4) | (9) | (126) |
| Orders | | 27 | 7 | 6 | 9 | 2 | | | | | | | | | | | 51 |
| Generic Aircraft | | | 8 | 19 | 23 | 28 | 42 | 46 | 69 | 80 | 62 | 77 | 65 | 68 | 83 | 89 | 759 |
| End-of-year Total | 409 | 436 | 451 | 476 | 508 | 538 | 580 | 626 | 672 | 733 | 773 | 824 | 875 | 934 | 1,013 | 1,093 | |
| MED/LONG RANGE 600 | | | | | | | | | | | | | | | | | |
| Perm Retired | | | | | | | | | | | | | | | | | 0 |
| Orders | | | | | | | | | | | | | | | | | 0 |
| Generic Aircraft | | | | | | | 0 | 0 | 17 | 22 | 30 | 25 | 32 | 34 | 31 | 32 | 223 |
| End-of-year Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 39 | 69 | 94 | 126 | 160 | 191 | 223 | |
| TOTAL | | | | | | | | | | | | | | | | | |
| Perm Retired | | 0 | (152) | (201) | (225) | (250) | (253) | (268) | (275) | (256) | (227) | (187) | (127) | (89) | (46) | (67) | (2,623) |
| Orders | | 335 | 215 | 169 | 112 | 52 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 900 |
| Generic Aircraft | | 0 | 162 | 286 | 325 | 353 | 401 | 491 | 477 | 485 | 551 | 437 | 478 | 416 | 434 | 436 | 5,731 |
| End-of-year Total | 5,621 | 5,956 | 6,181 | 6,435 | 6,647 | 6,802 | 6,967 | 7,190 | 7,392 | 7,621 | 7,945 | 8,195 | 8,546 | 8,873 | 9,261 | 9,629 | |




**ORIENT EXPRESS**

REPORT NO. C1-901-8327

MCDONNELL DOUGLAS
3855 Lakewood Boulevard, Long Beach, California 90846

PRINTED IN U.S.A. 7/86 S-6416